ABSTRACT

A memory system for storing and retrieving experience and knowledge with natural language through methods and apparatus is disclosed. The primary components of this memory system include syntactic processes, function word processes, ellipsis processes, morphology processes, meaning word sense number processes, purpose identification processes, plausibility and expectedness processes, communication processes, context storage processes, and text generation processes. The function word processes select and evaluate functions associated with function words which are certain words in each part of speech. Ellipsis processes replace unstated words. Morphology processes replace morphological words with phrases or clauses composed of function words and word sense numbers. A word sense number is an address to the meaning of a word. Certain nouns, verbs, and adjectives are meaning words. Word sense numbers are selected to be consistent with the context of the clause containing the words, the context, and stored experience and knowledge. Experience and knowledge are stored as nodes with associated clause implying word sense numbers organized into paths in a directed graph. Nodes in the directed graph have access conditions which determine if a node is accessible on a path. A path has an associated purpose relation which is any concept that labels the path. Purpose identification processes select: purpose relations, experience and knowledge, processes for setting a verb's result states or a state value, object classification paths, and activity selection paths. The communication processes coordinate incoming and outgoing natural language text. Text generation processes generate natural language text from word sense numbers.

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